

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- 1        1. (currently amended): A system for generating a two-dimensional  
2 spatial arrangement of a multi-dimensional cluster rendering, comprising:  
3              a concept space to visualize document content that is stored as clusters as  
4 multi-dimensional data in a memory based on extracted terms;  
5              a set of the stored clusters selected from the concept space with each  
6 selected cluster sharing a common theme comprising one or more of the extracted  
7 terms that are shared; and  
8              a placement module to place the clusters set into a two-dimensional visual  
9 display area of the memory, comprising:
  - 10                  an anchor point selector submodule to choose one of the selected  
11 clusters from the two-dimensional visual display area and to determine an anchor  
12 point on the chosen cluster that is located on an open edge of the chosen cluster  
13 where another along a vector defined from a center of the chosen cluster, wherein  
14 the vector intersects the anchor point; and  
15                  a cluster placement submodule to place a center of a further  
16 selected cluster ~~can only be adjacently placed and a outside of the anchor point on~~  
17 ~~the vector defined from the center of the chosen cluster intersects and to limit~~  
18 overlap of the chosen cluster and the further selected cluster; and  
19                  an arrangement submodule to arrange one or more of the  
20 remaining selected clusters into an arrangement of adjacent clusters that each  
21 have a center originating from outside of the anchor point and on the vector.
- 1        2. (previously presented): A system according to Claim 1, further  
2 comprising:

3           a sort module to sort the selected clusters in each clusters set by cluster  
4 size.

1           Claim 3 (canceled).

1           Claim 4 (canceled).

1           5. (currently amended): A system according to Claim 1, further  
2 comprising:  
3           an angle submodule to define the vector ~~for the anchor point~~ at a  
4 normalized angle.

1           Claim 6 (canceled).

1           Claim 7 (canceled).

1           8. (previously presented): A system according to Claim 1, further  
2 comprising:  
3           a rendering module to render each selected cluster in the two-dimensional  
4 visual display area as a circle having an independent radius.

1           9. (previously presented): A system according to Claim 8, wherein  
2 each circle has a volume dependent on a number of concepts contained in the  
3 selected cluster.

1           10. (previously presented): A system according to Claim 1, further  
2 comprising:  
3           a rendering module to render each selected cluster as a convex volume,  
4 wherein each convex shape represents visualized data for a semantic concept  
5 space.

1           11. (currently amended): A system according to Claim 1, wherein the  
2 placement module determines a further anchor point located on another open edge  
3 of the chosen cluster where ~~another a center of a further selected cluster can only~~

4     be adjacently is placed and outside the further anchor point on a further vector  
5     defined from the center of chosen cluster intersects and limits overlap of the  
6     chosen cluster and the further selected cluster, further comprising:  
7                 a grafting submodule arranging one or more of the remaining selected  
8     clusters into an additional arrangement of adjacent clusters that each have a center  
9     originating from outside of the further anchor point and on the further vector.

1                 Claim 12 (canceled).

1                 Claim 13 (canceled).

1                 14. (currently amended): A method for generating a two-dimensional  
2     spatial arrangement of a multi-dimensional cluster rendering, comprising:  
3                 visualizing document content as clusters that are stored as multi-  
4     dimensional data in a memory based on extracted terms by storing the clusters  
5     into a concept space;

6                 selecting a set of the clusters from the concept space with each selected  
7     cluster sharing a common theme comprising one or more of the extracted terms  
8     that are shared; and

9                 placing the clusters set into a two-dimensional visual display area of the  
10   memory, comprising:

11                 choosing one of the selected clusters from the two-dimensional  
12   visual display area and determining an anchor point on the chosen cluster that is  
13   located on an open edge of the chosen cluster where another along a vector  
14   defined from a center of the chosen cluster, wherein the vector intersects the  
15   anchor point; and

16                 placing a center of a further selected cluster can be adjacently  
17   placed and a outside of the anchor point on the vector defined from the center of  
18   the chosen cluster intersects and limiting overlap of the chosen cluster and the  
19   further selected cluster; and

20                   arranging one or more of the remaining selected clusters into an  
21 arrangement of adjacent clusters that each have a center originating from outside  
22 of the anchor point and on the vector.

1                 15. (previously presented): A method according to Claim 14, further  
2 comprising:

3                   sorting the selected clusters in each clusters set by cluster size.

1                 Claim 16 (canceled).

1                 Claim 17 (canceled).

1                 18. (currently amended): A method according to Claim 14, further  
2 comprising:

3                   defining the vector ~~for the anchor point~~ at a normalized angle.

1                 Claim 19 (canceled).

1                 Claim 20 (canceled).

1                 21. (previously presented): A method according to Claim 14, further  
2 comprising:

3                   rendering each selected cluster in the two-dimensional visual display area  
4 as a circle having an independent radius.

1                 22. (previously presented): A method according to Claim 21, further  
2 comprising:

3                   calculating a volume for each circle dependent on a number of concepts  
4 contained in the selected cluster.

1                 23. (previously presented): A method according to Claim 14, further  
2 comprising:

3                   rendering each cluster as a convex volume, wherein each convex shape  
4 represents visualized data for a semantic concept space.

1           24. (currently amended): A method according to Claim 14, further  
2 comprising:

3           determining a further anchor point located on another open edge of the  
4 chosen cluster where ~~another a center of a further selected cluster can be~~  
5 ~~adjacently is placed and outside the further anchor point on a further vector~~  
6 ~~defined from the center of the chosen cluster intersects and limiting overlap of the~~  
7 ~~chosen cluster and the further selected cluster; and~~

8           arranging one or more of the remaining selected clusters into an additional  
9 arrangement of adjacent clusters ~~that each have a center originating from outside~~  
10 ~~of the further anchor point and on the further vector.~~

1           Claim 25 (canceled).

1           Claim 26 (canceled).

1           27. (previously presented): A computer-readable storage medium  
2 storing code for causing a computer to perform the method according to Claims  
3 14, 15, 18, 21, 23, and 24.

1           28. (currently amended): A system for arranging concept clusters in  
2 thematic relationship in a two-dimensional visual display area, comprising:

3           a stored theme to logically represent one or more concepts based on terms  
4 extracted from a document set;

5           a plurality of ~~stored~~ clusters selected to represent a ~~stored~~ multi-  
6 dimensional visualization space ~~stored as clusters of multi-dimensional data in a~~  
7 ~~memory~~, wherein each selected cluster comprises at least one of the concepts in  
8 one such theme that is in common with the other selected clusters; and

9           a placement module to place the clusters in a two-dimensional visual  
10 display area ~~of the memory~~, comprising:

11                   a listing submodule to combine in order each ungrouped cluster  
12 from the selected clusters for the shared common theme into a list of placeable  
13 clusters;  
14                   a grouping submodule to add each placeable clusters list into a  
15 grouping with one or more other placeable clusters lists, wherein the clusters in  
16 the other placeable clusters lists each comprise at least one concept in the shared  
17 common theme;  
18                   an anchor submodule to choose a selected cluster from ~~one of the~~  
19 ~~placeable clusters lists in the grouping the two-dimensional visual display area~~  
20 and to determine an anchor point on the chosen cluster that is located on an open  
21 edge of the chosen cluster ~~where another along a vector defined from a center of~~  
22 ~~the chosen cluster, wherein the vector intersects the anchor point; and~~  
23                   a cluster placement submodule to place a center of a further  
24 ~~selected cluster can only be adjacently placed and a outside of the anchor point on~~  
25 ~~the vector defined from the center of the chosen cluster intersects and to limit~~  
26 ~~overlap of the chosen cluster and the further selected cluster; and~~  
27                   a grafting submodule to place the center of a selected cluster and to  
28 graft the clusters in the remaining placeable clusters lists in the grouping ~~at the~~  
29 ~~outside the anchor point and along the vector in the two-dimensional visual~~  
30 display area.

1                 29. (previously presented): A system according to Claim 28, further  
2 comprising:  
3                   a sort module sorting the clusters in each placeable clusters list in  
4 sequence.

1                 30. (original): A system according to Claim 29, wherein the sequence  
2 comprises a number of documents containing the one or more logically  
3 represented concepts.

1           31. (original): A system according to Claim 29, wherein the sequence  
2 comprises one of ascending and descending order.

1           32. (original): A system according to Claim 28, wherein each cluster is  
2 formed as one of a circular and non-circular convex volume.

1           33. (currently amended): A system according to Claim 28, wherein the  
2 vector ~~for each cluster~~ is defined at normalized angles.

1           Claim 34 (canceled).

1           35. (previously presented): A system according to Claim 28, wherein  
2 the shared common theme contains concepts within a pre-specified range of  
3 variance.

1           36. (currently amended): A method for arranging concept clusters in  
2 thematic relationship in a two-dimensional visual display area, comprising:

3           logically representing one or more concepts based on terms extracted from  
4 a document set as a theme;

5           selecting clusters representing a ~~stored~~ multi-dimensional visualization  
6 space stored as clusters of multi-dimensional data in a memory, wherein each  
7 selected cluster comprises at least one of the concepts in one such theme that is in  
8 common with the other selected clusters; and

9           placing the clusters in a two-dimensional visual display area of the  
10 memory, comprising:

11           combining in order each ungrouped cluster from the selected  
12 clusters for the shared common theme into a list of placeable clusters;

13           adding each placeable clusters list into a grouping with one or  
14 more other placeable clusters lists, wherein the clusters in the other placeable  
15 clusters lists each comprise at least one concept in the shared common theme;

16           choosing a selected cluster from ~~one of the placeable clusters lists~~  
17 ~~in the grouping~~ the two-dimensional visual display area and determining an

18 anchor point on the chosen cluster that is located on an open edge of the chosen  
19 cluster ~~where another along a vector defined from a center of the chosen cluster,~~  
20 ~~wherein the vector intersects the anchor point; and~~

21 ~~placing a center of a further selected cluster can only be adjacently~~  
22 ~~placed and a outside of the anchor point on the vector defined from the center of~~  
23 ~~the chosen cluster intersects and limiting overlap of the chosen cluster and the~~  
24 ~~further selected cluster; and~~

25 placing the center of a selected cluster and grafting the clusters in  
26 the remaining placeable clusters lists in the grouping [[at]] outside the anchor  
27 point along the vector in the two-dimensional visual display area.

1 37. (previously presented): A method according to Claim 36, further  
2 comprising:

3 sorting the clusters in each placeable clusters list in sequence.

1 38. (original): A method according to Claim 37, wherein the sequence  
2 comprises a number of documents containing the one or more logically  
3 represented concepts.

1 39. (original): A method according to Claim 37, wherein the sequence  
2 comprises one of ascending and descending order.

1 40. (original): A method according to Claim 36, further comprising:  
2 forming each cluster as one of a circular and non-circular convex volume.

1 41. (currently amended): A method according to Claim 36, further  
2 comprising:

3 defining the vector ~~for each cluster~~ at normalized angles.

1 Claim 42 (canceled).

1        43. (previously presented): A method according to Claim 36, wherein  
2 the shared common theme contains concepts within a pre-specified range of  
3 variance.

1        44. (previously presented): A computer-readable storage medium  
2 storing code for causing a computer to perform the method according to Claims  
3 36, 37, 38, 39, 40, 41, and 43.

1        45. (previously presented): A system according to Claim 1, wherein  
2 the common theme is defined by selecting the shared extracted terms to have  
3 common semantic meanings.

1        46. (previously presented): A system according to Claim 1, wherein at  
2 least one additional set of the clusters are selected from the concept space with  
3 each selected additional cluster sharing a further common theme comprising one  
4 or more of the extracted terms that are shared, wherein the further common theme  
5 is different than the common theme; and the at least one additional clusters set is  
6 placed into the two-dimensional visual display area.

1        47. (previously presented): A system according to Claim 1, wherein at  
2 least one additional cluster is selected from the concept space comprising the  
3 extracted terms that are unique from each other cluster in the concept space; and  
4 the at least one additional cluster is placed into the two-dimensional visual display  
5 area.

1        48. (previously presented): A system according to Claim 1, further  
2 comprising:

3              an output device to present the two-dimensional visual display area.

1        49. (previously presented): A method according to Claim 14, further  
2 comprising:

3 defining the common theme by selecting the shared extracted terms to  
4 have common semantic meanings.

1 50. (previously presented): A method according to Claim 14, further  
2 comprising:

3 selecting at least one additional set of the clusters from the concept space  
4 with each selected additional cluster sharing a further common theme comprising  
5 one or more of the extracted terms that are shared, wherein the further common  
6 theme is different than the common theme; and

7 placing the at least one additional clusters set into the two-dimensional  
8 visual display area.

1 51. (previously presented): A method according to Claim 14, further  
2 comprising:

3 selecting at least one additional cluster from the concept space comprising  
4 the extracted terms that are unique from each other cluster in the concept space;  
5 and

6 placing the at least one additional cluster into the two-dimensional visual  
7 display area.

1 52. (previously presented): A method according to Claim 14, further  
2 comprising:

3 presenting the two-dimensional visual display area on an output device.

1 53. (previously presented): A system according to Claim 28, wherein  
2 at least one additional set of the clusters is selected, wherein each selected  
3 additional cluster comprises one or more of the extracted terms that is in common  
4 with the other selected clusters in a further common theme that is different than  
5 the shared common theme; and the at least one additional clusters set is placed  
6 into the two-dimensional visual display area.

1           54. (previously presented): A system according to Claim 28, wherein  
2 at least one additional cluster is selected that comprises the extracted terms that  
3 are unique from each other cluster; and the at least one additional cluster is placed  
4 into the two-dimensional visual display area.

1           55. (previously presented): A method according to Claim 36, further  
2 comprising:

3                 selecting at least one additional set of the clusters, wherein each selected  
4 additional cluster comprises one or more of the extracted terms that is in common  
5 with the other selected clusters in a further common theme that is different than  
6 the shared common theme; and

7                 placing the at least one additional clusters set into the two-dimensional  
8 visual display area.

1           56. (previously presented): A method according to Claim 36, further  
2 comprising:

3                 selecting at least one additional cluster comprising the extracted terms that  
4 are unique from each other cluster; and

5                 placing the at least one additional cluster into the two-dimensional visual  
6 display area.